User Manual


WLM3


WLTA3


WLTD3

WLDT3

WLCT3

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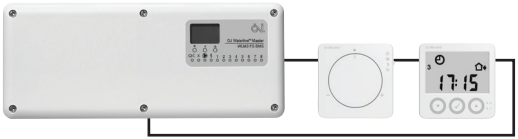
CONGRATULATIONS

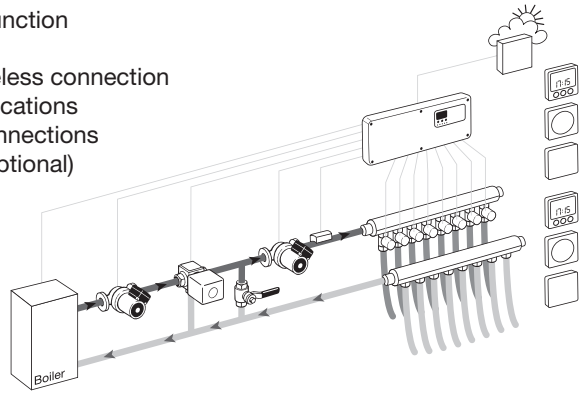


Congratulations with you new control system for underfloor heating and cooling.

The control system has been developed to provide a temperature control system for room heating and cooling, integrating the switching of primary heating and cooling sources with the control of water temperature and mixing devices.
This ensures the best possible comfort conditions and also reduces energy consumption.

Highlights of the system (depending on the units connected):

:: Heating and cooling control for true comfort
:: Humidity sensor to prevent condensation on floors
:: Energy saving comfort with adaptive function
:: Area control for easy operation
:: Flexible installation with wired and wireless connection
:: Network communication for large applications
:: Easy installation with plug and lead connections
:: Outdoor temperature compensation (optional)
:: Smart access with OJ FMS™
Gateway for FS Master (optional)



CONTENTS

QUICK GUIDES

INSTRUCTIONS

QUICK GUIDES

QUICK GUIDE, ANALOGUE ROOM SENSORS

TA TD TM

1 These room sensors have an adjustment knob which enables you to increase or decrease the room temperature setting by up to 4°C.

2 Room sensors type WLTM3 and WLTD3 have a slide switch for selecting the sensor's mode of operation. 4 different modes can be selected: Auto, Day, Night and OFF

- Auto: The room sensor will follow the temperature settings of the master or, if the room sensor belongs to an area controlled by a WLCT3 room controller, will follow the automatic sequence of temperatures and timings set in the WLCT3.
- Day: The room sensor will control room temperature according to the DAY setting defined in the master (factory setting 21°C).
- Night: The room sensor will control room temperature according to the NIGHT setting defined in the master (factory setting 18°C).
- OFF: The room sensor will control room temperature according to the OFF setting defined in the master (factory setting 5°C). This setting is intended to be a “frost protection” mode and is used if the room is to be left unoccupied for long periods.
  WLTM3 & WLTD3 are recommended for guest rooms and other infrequently used rooms, as they allow simple override of the automatic timing sequence.

QUICK GUIDE, WLCT3 PROGRAMMABLE ROOM CONTROLLERS

1 Setting time and day

If not already set by the installer, you must adjust the time and day on the WLCT3 room controller as follows (see picture with button positions):

a. Using a pen or pencil, press the small pinhole button beside the clock symbol.
b. Use the UP and DOWN buttons to adjust the hours and then press OK.
c. Use the UP and DOWN buttons to adjust the minutes and then press OK.
d. Use the UP and DOWN buttons to adjust the day number (1 = Monday) and then press OK.

2 Setting areas

If not already set by the installer, the WLCT3 room controller can be used to set the operating times and temperatures of room sensors (channels) in addition to controlling its own room.
To achieve this, do the following on the WLCT3 room controller:

a. Press the UP and DOWN buttons simultaneously for 4 seconds to enter the “InFo” menu.
b. Press the UP and DOWN buttons to locate the “ArEA” menu and then press OK.

c. The display will show “CH 1” (channel 1).
- Press the OK (√) button.
- Select “ON” if this channel (room sensor) is to be controlled by the WLCT3 room controller, otherwise select “OFF”.
- Now press the OK button to go to the next channel (CH 2) and repeat this step until all the required channels have been set to “ON”.

d. After all channels have been set, select the “ESC” menu entry and press OK.

NB: If different times and temperatures are required for other channels (room sensors) within the system, more than one WLCT3 room controller can be used. Care must be taken to ensure that a channel is not set to “ON” on more than one WLCT3 room controller.

3 Setting program times and temperatures

Adjusting the program times and temperatures.
On Mondays to Fridays (days 1-5), the WLCT3 room controller operates a 4-event program (wake, leave, return, sleep). On Saturdays and Sundays (days 6-7), it operates a 2-event programs (wake and sleep).
Each event can have a separate temperature and time.
Each event is indicated on the display by the symbols ( ).
To adjust the temperature and time settings:

a. Press the OK (√) button for 5 seconds.
b. The display shows the wake up time for Monday to Friday.
c. Use the UP and DOWN buttons to adjust the hours and then press OK.
d. Use the UP and DOWN buttons to adjust the minutes and then press OK.
e. Use the UP and DOWN buttons to adjust the desired wake up temperature and then press OK.
f. Repeat steps b to e for the leaving time and temperature, the return time and temperature and the sleep time and temperature.
g. Repeat steps b to e for Saturday and Sunday wake and sleep times and temperatures.

NB: To set up different types of event programs, change to Fahrenheit scale, change to AM/PM clock or change other advanced settings - please refer to the section Instructions WLCT3.

QUICK GUIDE, WLDT3 ROOM SENSOR WITH DISPLAY

1 This room sensor shows and controls the room temperature with the possibility of adjusting the standard setpoint in the system ±4°C.

2 The room sensor has mode selection between Auto, Comfort, Night and Off (frost protection) as well as connection for a minimum or maximum floor limit temperature sensor.

- Auto: The room sensor will follow the temperature settings of the master or, if the room sensor belongs to an area controlled by a WLCT3 room controller, will follow the automatic sequence of temperatures and timings set in the WLCT3.
- Day: The room sensor will control the room temperature according to the DAY setting defined in the master (factory setting 21°C).
- Night: The room sensor will control the room temperature according to the NIGHT setting defined in the master (factory setting 18°C).
- OFF: The room sensor will control the room temperature according to the OFF setting defined in the master (typically 5°C). This setting is intended to be a “frost protection” mode and is used if the room is to be left unoccupied for long periods.

QUICK GUIDE, MASTER MODULES

WLM3-1BA + WLM3-3BA

WLM3-1FS + WLM3-3FS

BA masters are preset and need no adjustment - see “Factory settings”.
With FS masters, you can adjust the operating temperatures for any rooms which are not controlled by a CT room sensor.

1 Setting day temperature

To adjust the day temperature (indicated by a sun in the display), press the OK button.
Now use the UP and DOWN buttons to select the required temperature and then press the OK button.

2 Setting remote night temperature

If a remote timer has been fitted by the installer, it is possible to switch to a night temperature.
To adjust the night temperature, press the UP or DOWN button until the moon is displayed and then press the OK button.
Now use the UP and DOWN buttons to select the required temperature and then press the OK button.

Other advanced settings can be changed - see “Master with display type WLM3”.

TROUBLESHOOTING

- If any LED on the master is flashing - see “Error indication”.

Room is too cold

(after running for at least 48 hours)

The room sensor is placed in a position that is not representative of the general temperature in the room. For example mounted on an external wall or near an external heat source.

1. If the room is controlled by a WLCT3 room controller, check that the time and temperatures are set correctly.
2. If the room sensor has an override switch (WLTM3 or WLTD3), the switch may be set to the “OFF” or “NIGHT” position.
3. For rooms with floor sensors, the maximum floor limit setting could be preventing the room from reaching the desired temperature.
4. The system may have insufficient heating capacity.
5. Poor insulation may be causing large heat loss.

Room is too hot

(after running for at least 48 hours)

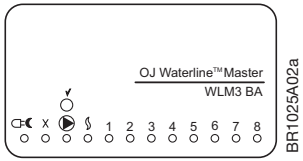
1. This might be caused by draughts within the wall cavities.
2. The room sensor is placed in a position that is not representative of the general temperature in the room.
3. If the room is controlled by a WLCT3 room sensor, check that the time and temperatures are set correctly.
4. If the room sensor has an override switch (WLTM3 or WLTD3), the switch may be set to the “DAY” position.
5. For rooms with floor sensors, the minimum floor limit setting could be maintaining the room temperature above the desired setting.
6. Solar gain or an external heat source.

Temperature is unstable

This could be caused by periodic solar gain or external heating. Try setting the master to simple ON/OFF control (DIP-10 set to ON).

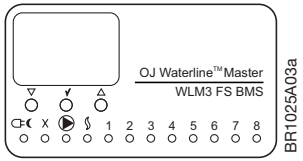
Master with Display - Type WLM3

Introduction



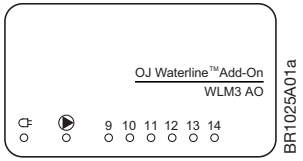
WLM3-xBA

Type WLM3-xBA masters are preset and need no adjustment. See “Master factory settings”.



WLM3-xFS

Type WLM3-xFS masters are equipped with graphic display to enable simple programming and unit operation to be achieved using simple and easily understood icons and symbols.



WLM3-xAO

Type WLM3-xAO is an add-on extension module for an additional 6 outputs. The module needs no adjustment.

Using clock thermostat (WLCT3):

If a room controller is used for area control of one room or a group of rooms, all the room sensors within this zone will operate according to the temperatures and times defined in the room controller. However, the local room sensors within the group can still be adjusted ±4°C, allowing some rooms to be set higher or lower than others. Which room sensors form part of the room controller's group is decided by programming the room controller (see WLCT3 instructions). Any room sensors that are not part of the room controller's group will operate according to the temperature defined in the master, although local adjustment of ±4°C will still be possible.

NOTE: The WLCT3 is ignored in cooling mode and the master's settings are used.

Using external switch for night setback

The day temperature setpoint is defaulted to the factory setting of 21°C and the night temperature to the factory setting of 18°C. These default settings can be changed on the FS master.
The current operating setpoint of the master can be forced into night temperature by connecting a separate timing device to the master. When the external switch or timer is used to switch to night setback, this overrides any time settings in a WLCT3 room controller, including any room sensors that are part of a group allocated to that room controller.

NOTE: In cooling mode, the night setpoint is calculated as day temperature +3°C.

Navigating the menu

By using the UP (△), DOWN (▽) and OK/CONFIRM (√) buttons, you move through the main menu into submenus. These submenus are described below. If you want to change a value, press the CONFIRM (√) button once, then alter the value with the UP (△) and DOWN (▽) buttons.
Then press the CONFIRM (√) button to accept the new value.

If you wish to reset the master to its factory settings, press the CONFIRM (√) button for 15 seconds until the 8 output LEDs start flashing. The factory settings have now been restored.

Day temperature	 21.0°C	Temperature setpoint for all room sensors which are not part of a room controller group. Press the OK (√) button and then the UP (△) or DOWN (▽) button to adjust the setpoint.
Night temperature	 18.0°C	When activated via an external timer, this temperature applies for all room sensors connected to the master. Night setback can also be activated on individual room sensors (WLTM3 & WLTD3) by setting the selector switch to “NIGHT” position. A room controller (WLCT3) will automatically switch to night setback at the programmed times, as will all other room sensors included in its group.
OFF temperature	 5.0°C	Room sensors with a selector switch (WLTM3 & WLTD3) can be set to “OFF” position. This position is used for frost protection. If the temperature in the room drops to the OFF temperature setting (factory setting 5°C), heating will be activated to prevent frost damage. The 5°C setting can be changed in the master module.
Max.	 27.0°C	Maximum floor limit temperature for room sensors with limit sensor (floor sensor).
Min.	 17.0°C	Minimum floor limit temperature for room sensors with limit sensor (floor sensor).

Supply water temperature control

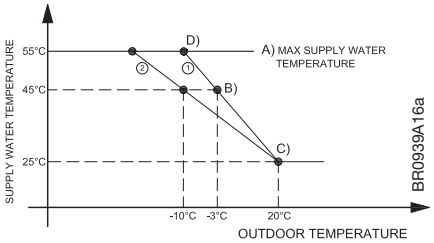
Using the supply water sensor to limit supply water temperature:

A limit sensor must be used with the WLM3-xFS, but can be used without an outdoor compensation module (WLOC3. In this case, the master will control the temperature of the supply water flowing into the system via a 3- or 4-port mixing valve and actuator.

Using the outdoor compensation module for weather compensation

When an outdoor compensation module (WLOC3) is connected to the system, the master calculates the correct supply water temperature taking into account the heat losses that vary with outdoor temperature as well as the room temperature requirements of the system. For example, on a day when outdoor temperature is 12°C, it is possible to run the heating system with a supply water temperature of only 35°C. This ensures economical boiler operation and comfortable room conditions throughout the year. The maximum permissible supply water temperature prevents excessive water temperatures if outdoor temperature becomes extremely cold, e.g. -30°C.

	55.0°C	Max. permissible supply water temperature. (This is a safety maximum) The factory default setting is 55°C, but this can be changed via the display on the master.	
		-3.0°C	**Winter** Outdoor temperature
		45.0°C	**Winter** Design supply water temperature at outdoor temperature –3°C
			**Return**
		20.0°C	**Summer** Outdoor temperature
		25.0°C	**Summer** Supply water temperature at outdoor temperature 25°C
			**Return**



Line 1: Factory settings
Line 2: Example of modified settings

Max. supply temperature
The max. permissible supply water temperature is set according to the design requirements of the installation (line A on the curve). This is the safety maximum.

Weather compensation

Winter
A design outdoor temperature and the corresponding design supply water temperature are set (point B). To increase heat output, adjust the supply water temperature upwards until you feel comfortable (we recommend only a 2°C adjustment of this temperature at a time, allowing time for the system to respond).

Summer
A design outdoor temperature and the corresponding design supply water temperature are set (point C). Set the outdoor temperature to the level where heating will no longer be required (this is known as the summer shut-down temperature). The default setting is 20°C. The default setting is 20°C.

Then set the supply water temperature to the level you require when the outside temperature is 20°C. The default setting is 25°C.

To start summer shut-down at a lower temperature level, reduce the outdoor temperature setting, and/or reduce the supply water temperature at this setting.

The master calculates the supply water temperature on the line C to 1 if an outdoor design temperature of -3°C is selected, or on the line C to 2 if an outdoor design temperature of -10°C is selected. The intersection point on the line of the actual outdoor temperature indicates the calculated supply water temperature.

Compensation for outdoor temperature is only possible if an outdoor compensation module (WLOC3) is installed. Without an outdoor compensation module, the master will adjust the supply water temperature according to the design supply water temperature winter setpoint (default 45°C).

BOOST function with outdoor temperature compensation:

The supply water temperature has a BOOST function that increases or decreases the supply water temperature depending on the maximum temperature deviation of any active room or active floor.

The purpose of the BOOST function is to ensure that desired room temperatures can be reached faster than normal.

The BOOST function is an offset temperature added or subtracted from the normal supply temperature setpoint.

The offset value is calculated as three times the worst temperature deviation in the system.

The maximum permissible BOOST compensation is limited to +/-15°C.

The BOOST function is an additional input to the current outdoor temperature compensation calculation and gives the following algorithm:

Water supply temperature setpoint = outdoor temperature compensated water supply temp. + BOOST temp.

This combined setpoint is shown on the master's display as the desired supply water temperature. If no outdoor sensor is detected (no outdoor temperature compensation), the BOOST function is disabled.

Example:
Calculated supply water setpoint = 35°C
Maximum temperature deviation of active rooms = 4.2°C
BOOSTED supply water setpoint = 35°C + 3x4.2°C = 47.6°C
The actual supply water setpoint of 47.6°C is also shown on the display.

Service menu
Press the OK button to enter the menu.
The controller will automatically return to the main menu after 10 minutes.

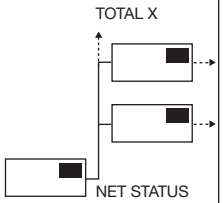
5.00 — Software version

OK

OK, no faults/errors
E0 to E11 shown if a fault/error is present. See page 15 for explanation.
LS = Low signal on wireless room sensors/controllers
LB = Low battery on wireless room sensors/controllers *Submenu 2*

C00 - OU---	C08 - OU---
C01 - 1U-E1	C09 - OU---
C02 - 1U-OK	C10 - OU---
C03 - OU---	C11 - OU---
C04 - OU---	C12 - OU---
C05 - OU---	C13 - OU---
C06 - OU---	C14 - OU---
C07 - OU---	C15 - OU---

Press OK to enter and see which unit is faulty *Submenu 2a*



Network status (only visible when multiple masters are connected in a network)
If a network master detects a network, this menu option is shown.
Here, it is possible to check the status of the network.

"TOTAL X" – Shown on the top line. Indicates the total number of masters acting as network slaves detected by the network master. (X is the number of connected network slaves.)
"NET STATUS" – Shown on the bottom line. May be:
"NET OK" – No errors detected in the network
"NET ERROR" – Indicates that communication with one or more of the network slaves has been lost. Use the menu option below to check which network slaves the error concerns.
"ERROR ON IDxx" Indicates whether any of the network slaves have local errors. (IDxx indicates the network slave concerned. The ID number is the channel set on the network slave's encoder.) Use the menu option below to check which network slaves the error concerns.

Press OK to enter the menu option and view which network slave the error concerns and which error it is. Using the "UP" and "DOWN" buttons to select the network slave whose status is to be shown on the right side of the display.

>ID11 - ? ID12 - ? ID21 - ?	Message

"MESSAGE" – Shown on the right side of the display. May be:
"LOADING STATUS…" – Receiving information from the network.
"STATUS OK" – No error detected.
"NET-COMM ERROR" – Communication to the network slave is lost. Check the connection or remove the network slave from memory with a hard reset.

	"E:CHANNEL" – This is a channel error which must be checked locally on the master concerned. "E1:0-COMM" – Channel 0 or channel 15 are no longer sending data. "E2:UNITNUM" – Units are set for channels 9-14 but no AO module found. "E3:APPSENS" – Application sensor defective. "E4:OUTSENS" – The outdoor compensation module (WLOC3) is defective. "E5:SUPSENS" – The external supply water sensor (type ETF-1899A) is defective. "E6:OVERHEAT" – Internal overheating. "E7:PSUSENS" – Defective internal overheating sensor. "E8:AO-COMM" – Communication to the AO module has been lost. "E9:MAXUNIT" – Total number of input units exceeded. "E10:RFCOMM" – No connection to wireless receiver, type WLRC3
 -2.4°C	**Read-out** Outdoor temperature
 49.2°C 39.2°C	**Read-out** Actual supply water temperature Actual application sensor temperature
 44.4°C	**Read-out** Setpoint calculated by the controller for the supply water temperature
 3.5V	**Read-out** Control signal for the mixing valve. The mixing valve is fully open at 10V (unless the output setting has been changed to 10-0, in which case the valve will be fully closed at 10V). Press the OK button for 3 seconds to change P, I and 0-10V/10-0V settings.
	Press and hold the OK button for 3 seconds.
	 20.0°C P-band setting
	 300 I-time setting
	 10 V 0 V Setting for 0-10V or 10-0V DC valve signal
	 Back

Read-out
Room temperature in the various rooms. Press the OK (√) button and then the UP or DOWN button to select another room. The actual room temperature is shown in the centre of the display. If a maximum limitation sensor is connected, the temperature measured by the sensor is shown above the actual room temperature. If a minimum limitation sensor is connected, the temperature measured by the sensor is shown below the actual room temperature.

In special cases, the behaviour of the temperature regulator can be changed.
Press the OK (√) button for 3 seconds to enter special settings for the channel selected.

- P (P-band) 3..20°C (default = 5°C)
NOTE: Set to 0 for pure ON/OFF control (values of I and B are ignored)
- I (I-time) 60..720 minutes (default = 90)
- B (boost time) 0..12 hours (default = 6 hours) – This function speeds up temperature changes when a setpoint change is detected by opening or closing the actuators 100% until the room temperature reaches the new desired temperature.
After that, PI temperature control takes over again.

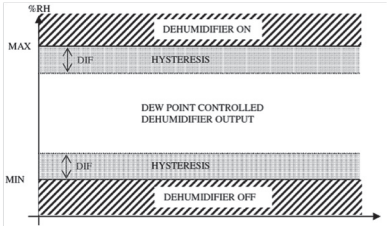
View and adjust humidity control settings.
This menu is shown when a humidity sensor is connected. Minimum and maximum humidity can only be controlled if a dehumidifier is connected to the corresponding output channel.
Press the OK button to enter the menu.

To view humidity and dew point data, choose the channel number to which the dehumidifier is connected using the UP and Down buttons.

Read-outs for dew point and humidity:
In the %RH menu, the uppermost line will show the current dew point and humidity.
- Channel Zero shows the worst-case situation in the whole system.
- Other channels show the local dew point and humidity.
- Only channels to which a humidity sensor is connected are shown.

Press the OK button for 3 seconds to adjust dehumidifier settings.

Adjust the flashing value and press OK to save the setting and move to the next parameter. Once the last parameter has been saved, the display returns to the main menu.



	Read-out Output runtimes in years, days, hours and minutes can be viewed.
	 Total system runtime
	 Boiler relay runtime
	 UFH pump relay runtime
	 X-OUTPUT runtime
	 Runtime of each channel output relay on master YY:DDD:HH:MM Years: Days: Hours: Minutes
	 Runtime of each channel output relay on add-on module YY:DDD:HH:MM Years: Days: Hours: Minutes
	 Return to the main menu by pressing the OK button briefly. Reset all timers by pressing and holding the OK button for more than 5 seconds. (A countdown is shown on the display, which automatically returns to the main menu on reaching zero.)
	Minimum permissible supply water temperature during cooling. (Range 5-20°C / default 16°C)
	Safety margin between supply water temperature and dew point during cooling. (Range 1-10°C / default 3°C)

Cooling channel settings
Mode:
OFF: Channel output (room) not used for cooling.
ON: Channel output (room) used for both cooling and heating.
Dual: Channel output (room) used for heating and the following channel output used for cooling.

Channel	Mode	Default
Ch 1	OFF / ON / Dual	ON
Ch 2	OFF / ON / Dual	ON
….		
…..		
Ch 14	OFF / ON only	ON

View cooling channel settings. Press the OK button to enter the menu.

Choose the channel number using the UP and DOWN buttons.
Press the OK button for 3 seconds to adjust the cooling channel setting.

Choose the cooling channel setting using the UP and DOWN buttons. Icon for channel = heating only.

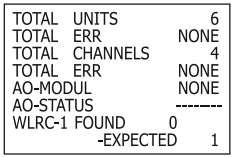
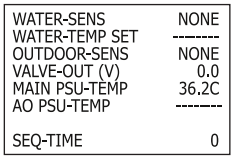
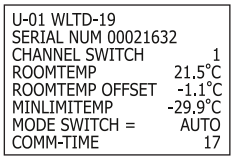
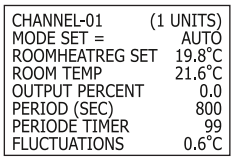
Icon for channel = heating and cooling on same channel.

Icon for channel = heating with following channel = cooling.

Press the OK button to return to the read-out menu.

Cooling offset (positive temperature offset relative to heating setpoint)
Range 0-10°C / default 3°C

Exit service menu.

	Advanced service menu on FS Masters		
To enter	Press the UP and DOWN buttons simultaneously for 5 seconds while the “sun” is shown on the display. Then also press the “OK” button for 1 second.		
	The display now shows the following menu:		Number of units on the 1-wire bus Number of units on the 1-wire bus with errors Number of channels used Total number of errors in the system Add-on module present? Add-on module status (OK or ERRORS) Number of WLRCs found Number of WLRCs expected
	Press the UP button to access the next menu:		Actual supply water temperature Current supply water setpoint Actual outdoor temperature Actual voltage output to mix. valve Internal temperature of master Internal temperature of AO module Number of WLRCs found PWM (sequence) timer
	Press the UP button to access the next menu:		U-01 = unit number 1 + type Special ID number for unit Setting on channel selector Actual room temp. Actual offset on adjust button Measurement on limit sensor input Setting on mode slider Seconds since last communication
	Press the Up button to access the next menu (this takes you through all the units on the 1-wire (or wireless) bus).		Channel output (regulator) Channel mode Setpoint and mode Measured room temp. PWM output PWM period Actual PWM time Measured fluctuation in room

Using cooling functions

A WLAC3 switching module is needed if the installation is to control cooling.

To enable cooling, switch the slider switch on the right hand side to the cooling position.
The system now switches to cooling mode with a setpoint of 3°C above the master's day temperature setpoint.
(If the WLAC3 module is connected to a BMS control signal, the BMS system will decide when to switch to cooling – in this case, the slider switch on the WLAC3 must be left in the heating position).

- Using a humidity sensor, the system limits condensation on floor surfaces due to high humidity.
- If a dehumidifier is used, it will be activated if high humidity limits the cooling function.
- When cooling is enabled, the cooling setpoint will be determined by the master and will override the settings of any clock thermostat to ensure optimum energy efficiency.

Factory settings, masters

Master	Settings		Factory setting	Own setting
BA/FS	Room temperature		21.0°C	
	Night temperature		18.0°C	
	OFF temperature		5.0°C	
	Floor limit temp., high		27.0°C	
	Floor Limit temp., low		17.0°C	
FS	Max. water temperature		55.0°C	
	Weather compensation	Outdoor temperature	-3.0°C	
	Cold (winter)	Water temperature	45.0°C	
	Weather compensation	Outdoor temperature	20.0°C	
	Warm (summer)	Water temperature	25.0°C	

Additional information

Master	Settings		Factory settings
BA/FS	Cooling mode	Day cooling temperature	Day heating temperature + 3°C
		Night cooling temperature	Day cooling temperature +3°C
		Dew point safety zone	Dew point + 3°C
	Room temperature control	PI-control	P = 4°C I = 90-180 sec K-factor = 0.1
	Floor Limit temperature control	P-control	P = 4°C
	Adaptive PWM control	Max. permissible room temperature fluctuation	+/- 0.5°C
		PWM time interval limits	15-45 minutes
	Max. number of connected sensors	Wired and wireless	24
	Sensor timeouts	Wired	300 sec. (5 min)
		Wireless	10000 sec. (2 h 45 min)
FS		Minimum supply water temperature for cooling	16°C
	Supply water temperature control	PI-control	P = 20°C I = 300 sec. K-factor = 0.05

Error indication

During normal operation the power LED will be ON when the master is energised. The red output LEDs (1 to 8 on the master and 9 to 14 on the add-on module) indicate whether the output relay is ON/OFF.

An error/fault is indicated if the power LED or one of the red output LEDs flashes. The problem can be identified by the number of times a specific LED flashes, as described in the following:

Error number will be indicated by the number of flashes, with a pause of less than a 1/2 second between flashes. Indication will be followed by a pause of 2 seconds, after which the sequence will be repeated. Error codes can also be seen in the service menu of WLM3-FS masters (submenu 2).

Flashing power LED (red and green)
Communication to the network has errors. On the network master, it indicates that communication to one or more of the masters acting as network slaves has been lost. On a network slave, it indicates that communication to the network master has been lost.

Flashing power LED (red)

E1, 1 flash	One or more room sensors, room controllers, WLHX3s or WLAC3s that are set to channel 0 or channel 15 are no longer sending data to the network controlling master. The fault can only be corrected by replacing the unit. The master must then be hard reset (see next page). *(NOTE: If the room sensor is of wireless type, the error/fault message could be an indication that the power has failed and that the unit's internal battery needs to be replaced.)*
E2, 2 flashes	One or more units have been set to a channel number which does not exist in the system. For example, the message will occur if the units are set to channels 9-14 and the required add-on (AO) module is not found in the system. The error can be corrected by setting the channel number of the unit to one that exists in the installed master/add-on module system.
E3, 3 flashes	Application sensor defective. The fault can only be corrected by replacing the temperature sensor. If the sensor has been deliberately removed to change system operation, the master must be hard reset (see next page).
E4, 4 flashes	The outdoor compensation module (WLOC3) is defective. The fault can only be corrected by replacing the outdoor compensation module. If the module has been deliberately removed to change system operation, follow the HARD RESET instructions below.
E5, 5 flashes	The external supply water sensor (type ETF-1899A) is defective. The fault can only be corrected by replacing the temperature sensor. If the sensor has been deliberately removed to change system operation, the master must be hard reset (see next page).
E6, 6 flashes	Internal overheating. The master has its own internal overheating protection system. The problem can be remedied by improving ventilation around the master module.
E7, 7 flashes	Defective internal overheating sensor. The master will operate as normal, but will no longer be protected against internal overheating. The fault can only be corrected by replacing the master.
E8, 8 flashes	Communication to the AO module has been lost. The fault can be corrected by re-establishing connection to the AO module or by replacing the AO module if it is defective. If the AO module has been deliberately removed, the master must be hard reset.
E9, 9 flashes	Total number of input units exceeded. Please contact the manufacturer or your local service engineer.
E10, 10 flashes	No connection to wireless receiver, type WLRC3.

Only one error/fault condition can be shown at a time. If more than one error occurs, they will be prioritised in the order described (E1, 2, 3…).

Flashing output LED (red):

A flashing output LED indicates that the room sensor/controller on that channel has a fault/error. Error codes can also be seen in the service menu (submenu 2a).

E1, 1 flash	The master has lost communication to the room sensor. The fault can be corrected by re-establishing connection to the room sensor. The fault condition will be automatically reset once correct communication is resumed. If the room sensor is defective and has to be replaced, or if it has been removed deliberately, the master must be hard reset. (NOTE: If the room sensor is of wireless type, the error/fault message could be an indication that the power has failed and that the unit's internal battery needs to be replaced.)
E2, 2 flashes	The internal sensor in the room sensor/controller is defective. The fault can only be corrected by replacing the room sensor/controller. Once the new room sensor/controller has been installed, the master must be hard reset.
E3, 3 flashes	The floor sensor connected to the room sensor/controller is defective. Replace the faulty sensor. Reset is NOT required.
E5, 5 flashes	Two or more room controllers are trying to control this output. Check the “AREA” setting of the room controllers.
E6, 6 flashes	Channel engaged. Several functions selected for same channel. Possible causes of the fault: - Channel 1 used for dehumidification, but the channel is already active (engaged). This is only possible for channel 1. - Channels 2..14 used for the cooling output of in dual heating/cooling mode, but the channel is already active (engaged). - Channels 2..14 used as step 2 output in 2-step mode, but the channel is already active (engaged). - Channels 1..14 used for humidification (humidity sensor), but the channel is already active (engaged).

RESET
Two different reset actions can be used.

HARD RESET
Press the ‘√’ button for 5 seconds to initiate a hard reset. Initiation will be indicated by all output LEDs (1-8) lighting up consecutively. This reset will remove from the system any room sensor with a defective input sensor or any defective AO module. The fault message will be reset but the defective items will no longer be part of the system. For information on adding or replacing a new unit, see “Replacing equipment - Replacing a faulty sensor/controller”. To erase the identity of the defective component from the master's memory, a hard reset must be performed. Hard resets do not alter the temperature settings already programmed into the master.

FACTORY RESET
Press the (√) button for more than 15 seconds to initiate a total factory reset. Initiation is indicated by the flashing of output LEDs 1,3, 5 and 7 alternating with the flashing of output LEDs 2, 4, 6 and 8 (while the “√” button is pressed).
A factory reset will return all programmed temperature settings to the factory defaults. It will also remove all room sensors/controllers from the master's memory and reset the system to accept only those room sensors/controllers that are functioning correctly.
For information on reconnecting room sensors/controllers, see “Replacing equipment - Replacing a faulty sensor/controller”.

Waterline Room Controller - Type WLCT3

Introduction

Room controller type WLCT3 is a 4-event programmable controller used to control areas with underfloor heating or special features of a WLM3 installation. The standard WLCT3 can be used to programme up to 4 time and temperature events over a 24 hour period, based on a 7 day schedule. Once a WLCT3 has been installed, the times and temperatures for the area(s) it controls will no longer be the defaults set on the main WLM3 master.

In addition to the WLCT3's immediate area of control, set in the 'AREA' option of its internal menu, the WLCT3 can control the time and temperature characteristics of other sensors (up to 14) connected to the WLM3 master. This maximises comfort and efficiency while saving energy and reducing costs.

When the WLCT3 is used to control other areas, the ±4°C adjustment possibility on the other sensors will now be relative to the WLCT3 setting. Example: A WLCT3 is set to 22°C and has been given control over 'Area 1'. The WLTA3 sensor installed in 'Area 1' now has a control range of 18°C (22-4°C) to 24°C (22+4°C).
In addition to the standard WLCT3 room controller, you may have added one of the following to your system:

2-step mode: This mode controls a secondary heat source, operating in a specific area as a boost function in conjunction with the underfloor heating.
Radiator mode: This mode is used to control the radiators in a central heating system.
Hot water mode: This mode is used to control the production of domestic hot water.
Your installer should have set up the WLCT3 controller to suit your needs during installation. If, however, you wish to change any of the settings, please follow the instructions detailed in the following pages.

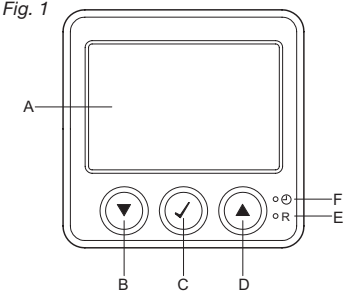
The WLCT3 can be reset by pressing the button marked 'R' (see fig 1), this will allow you to return to the factory settings at any time. Details of the default factory settings are given after the WLCT3 programming section of this manual.

Installation

For installation instructions, see "Installation" under "Waterline Room Sensors - Type WLTx3".

Getting started

Fig. 1



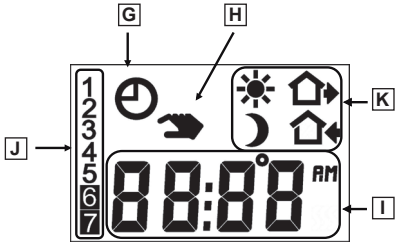
BR1026A05a

Buttons

A:	B: ▼	C: √
Display	Adjustment down	OK - Accept

D: ▲	E: R	F:
Adjustment up	Reset to factory settings	Pinhole button for clock adjustment

Display



Buttons

G:	H:	I:
Automatic mode	Manual mode	Time and temperature

J:	K:
Day number	4-event symbol Wake Out Night Home

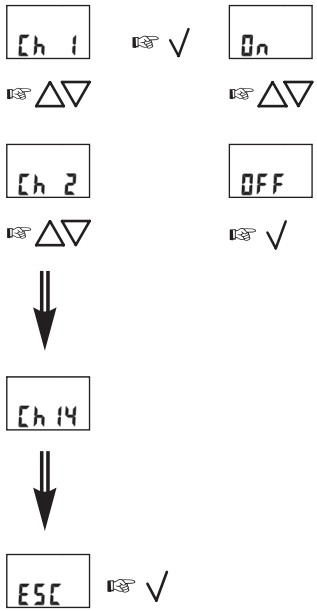
Activating the room controller (first-time startup)

1. The first time power is connected (or after a factory reset), the clock and weekday will flash and must be set.
2. The channel to be controlled from this room controller must then be selected.
3. Finally the “Area” (other channels) controlled from this WLCT3 must be selected.

NOTE: If you need to adjust the time at a later date, insert a pin into the hole marked for setting the clock.

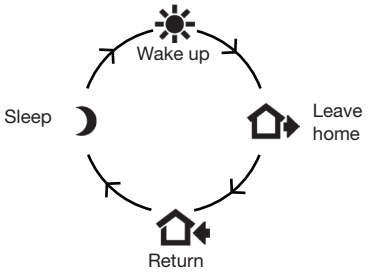
0:00 ☞ △ ▽ √	Press the UP (△) or DOWN (▽) button to select the correct **hours** and then press the OK (√) button.	
2:00 ☞ △ ▽ √	Press the UP (△) or DOWN (▽) button to select the correct **minutes** and the press the OK (√) button.	
2:10 ☞ △ ▽ √	Then press the UP (△) or DOWN (▽) button to select the correct **day** and press the OK (√) button to confirm.	1-7

AREA SETUP - see next page.

ArEA	**ArEA - (group of rooms)** The rooms/channels set as part of the WLCT3 area will follow the automatic temperature settings of this room controller (4-event timer, min. and max. floor temperature limits). Set a channel (room) to ON if it is to be part of this area. Example: An area could be the living room, kitchen, and children's rooms, all of which have a high temperature requirement during the afternoon and early evening and a lower temperature requirement during the morning and night. Each room has an associated channel number (Ch1, Ch2, etc.) determined by the number of the output on the master which controls the valve/actuator for that room. Example: A system may have the kitchen room sensor operating master output #4 and the children's room sensor operating master output #5. If the WLCT3 room controller is situated in the living room and operates output #1, the WLCT3 must be programmed to control output channels 1, 4, & 5.
	1. Press the UP (△) or DOWN (▽) button to select the channel/room. 2. Press the OK (√) button to view the ON/OFF settings. 3. Press the UP (△) or DOWN (▽) button to change the ON/OFF settings. 4. Press the OK (√) button to return to the channel/rooms select menu. Set the channel/room (Ch) to ON if it is to follow the settings of this room controller. A total of 14 channels/rooms can be controlled. NOTE: If the channel selector (hex encoder) is set to 1 .. 14, the selected channel will always be ON (cannot be set to OFF).

Everyday use of the room controller

4-Event Clock Mode



The day has been split into 4 events describing a typical day. When the room controller is in 4-event mode, it will automatically change the temperature to the required level at the programmed times. As standard, the room controller uses 4 events on days 1 to 5 (Monday to Friday) 2 events on days 6 and 7 (Saturday and Sunday). Each event allows you to increase or decrease the set temperature. For information on programming, see “Programming 4-Event Clock Time and Temperature” and “Advanced Settings and Read-outs”.

4-event clock mode / automatic mode:		In automatic mode, the clock symbol (🕓) and one of the 4-event symbols (☀ 🏠 🏠 ☽) will be shown along with the time and setpoint. For information on programming, see “Programming 4-Event Clock Time and Temperature”.
Comfort mode:		**Temporary override** To temporarily override any temperature in the 4-event schedule, press the UP (△) button once to show the temperature in the display. Then press the UP (△) or DOWN (▽) button to increase or decrease the temperature. The display flashes for 5 seconds, and then reverts to the time. Override will operate until the next programmed event, when the thermostat will return to the scheduled 4-event program.
☞ √ √		**Cancelling comfort mode (temporary override)** To cancel temporary override, press the OK (√) button twice.
Manual mode: ☞ √		**Permanent override** During holidays, the scheduled 4-event program can be overridden. Press the OK (√) button and then the UP (△) or DOWN (▽) button until the override temperature is set. The set temperature will remain on the display and the unit will continue to operate to this temperature permanently.
☞ √		**Cancelling manual mode** To cancel permanent override, press the OK (√) button once, and the unit will resume automatic operation.

Programming 4-event times and temperatures

For each event, start time and required temperature must be set.

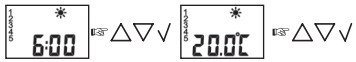
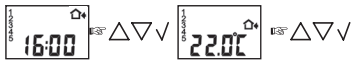
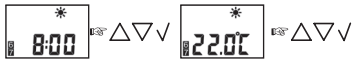
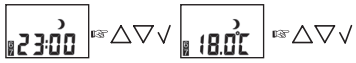
Example: You want the heating to start at 07:00 in the morning and the temperature to be 25°C. Press the OK (√) button for 3 seconds and the start time will be displayed. Change this to 07:00 with the UP (△) or DOWN (▽) button. Press the OK (√) button to confirm.

The temperature will now be displayed. Change this to 25°C with the UP (△) or DOWN (▽) button. Press the OK (√) button to confirm. This procedure can now be repeated for the second, third and fourth events.

These settings will be valid for days 1-5, as shown on the display. To program days 6 and 7, repeat the above. Days 6 and 7 are usually Saturday and Sunday, and only have two events (generally morning ON and evening OFF).

The temperature can be set within the range of +5 to +35°C. It is also possible to switch heating OFF for an event by reducing the setting to 5°C and then pressing the DOWN (▽) button once more.

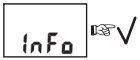
NOTE: When programming the "Sleep" time (event 4), ensure that it is before midnight (00:00).

Press the OK (√) button for 3 seconds to start programming	
Days 1-5	
	☀ : Time and temperature
	: Time and temperature
	: Time and temperature
	☽ : Time and temperature
Days 6-7	
	☀ : Time and temperature
	☽ : Time and temperature

Advanced settings and read-outs

☞△ + ▽ **3 sec.**

Press the UP (△) and DOWN (▽) buttons simultaneously for 3 seconds. INFO will be displayed.



☞√

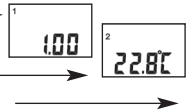
☞△▽

INFO - Information
INFO allows you to view the room and floor temperatures actually measured.
The floor temperature is only shown if a floor sensor is installed.

Software Version →

Room temperature
Outdoor temperature →

If no sensor is installed,
"OFF" is displayed



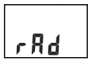
☞√

Press the UP (△) or DOWN (▽) button to view the various read-outs.
No changes can be made here. Use the OK (√) button to exit.

☞√

☞△▽

App – Application
Select if the room controller is to be used in one of the special modes.
On entering this menu, the current setting will be displayed.



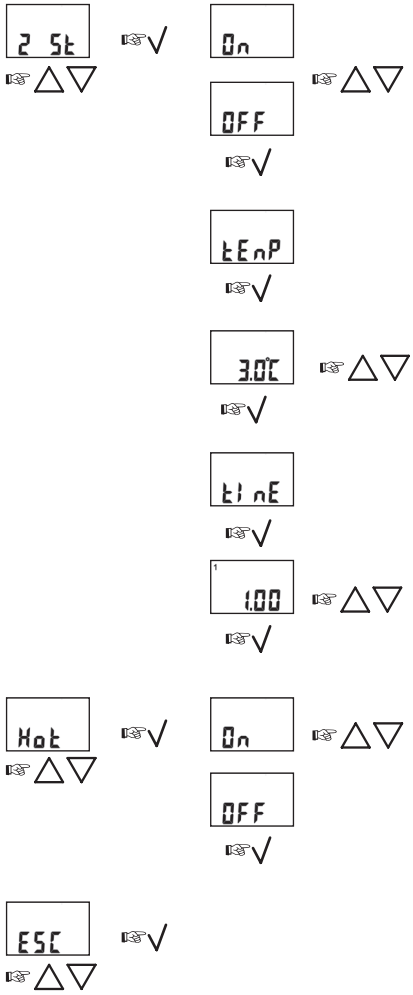
☞√

☞△▽

☞△▽

☞√

Radiator mode
Operates the channel as a radiator zone. Operates as an ON/OFF regulator, activates the X-OUTPUT and boiler (but not the UFH pump). Channels selected in the ArEA menu will also act as radiator channels.



2-step mode
Operates an additional output as a boost output.
The selected channel output is the normal floor heating output.
The next channel output is the boost output, which is activated under the conditions below.

tEmP sets the temperature hysteresis.

(The tolerance before the second output is allowed to activate).
The menu is only shown if 2-step mode is set to ON.

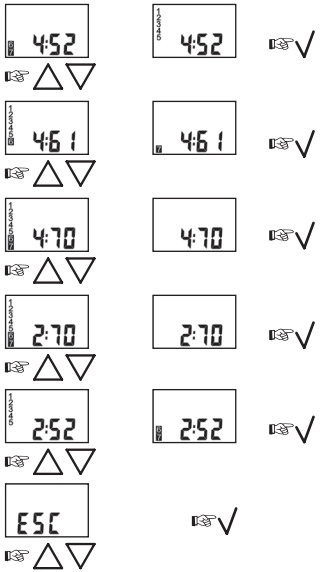
timE sets the time during which temperature is permitted to be too low before the second output is activated (the output with the next number).
The menu is only shown if 2-step mode is set to ON.

Hot water mode
Operates the channel as a thermostat for a domestic hot water cylinder.
Operates as an ON/OFF regulator, activates the X-OUTPUT and boiler (but not the UFH pump).

Press the OK (√) button to return to the APP menu.

PRO - 4-event sequence
It is possible to change the factory-set sequence for Days 1-5 (4 events) and Days 6-7 (2 events).
Days 1 to 5 are usually Monday to Friday, while Days 6-7 are usually Saturday and Sunday.

An event is either a comfort temperature or a setback temperature. You can select from the following sequences, which are displayed in the form of a code.



4 events for 5 days, 2 events for 2 days.
Indicated by code 4:52
Select the required sequence with the OK (√) button.

4 events for 6 days, 2 events for 1 day.
Indicated by code 4:61
Select the required sequence with the OK (√) button.

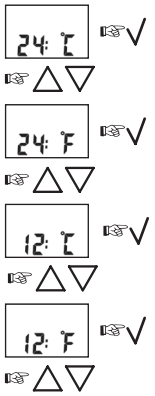
4 individual events for each day of the week. Indicated by Code 4:70
Select the required sequence with the OK (√) button.

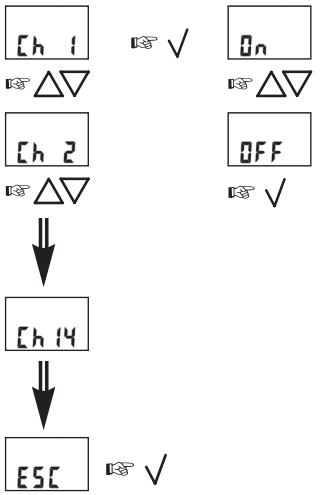
2 individual events for each day of the week. Indicated by Code 2:70
Select the required sequence with the OK (√) button.

2 events for 5 days, 2 event for 2 days. Indicated by Code 2:52
Select the required sequence with the OK (√) button.

Escape without any changes

Hi Li - Floor sensor Max. and min. permissible floor surface temperatures
A floor limit sensor can be connected to the room controller.
Max. limitation is used for safety purposes to prevent excessive floor temperatures. Wooden flooring should, for example, not be allowed to exceed 27°C. The value can be set from 5°C up to 55°C. The value can also be set to OFF by adjusting the temperature to 55°C and then pressing the UP button once more.
Min. limitation is used where the temperature of the floor must never fall below the set minimum temperature. Examples include kitchens or bathrooms with tiles. The value can be set from 5°C to 55°C. The value can also be set to OFF by adjusting the temperature to 5°C and then pressing the DOWN button once more. Remember that the max. limit temperature must be set higher than the min. limit temperature.
The limit temperatures defined in the room controller will be valid for all room sensors with floor limit sensor (type WLTD3) included in the area allocated to the WLCT3 controller.

		The maximum permissible floor temperature setting is shown. Use the UP (△) or DOWN (▽) button to increase or reduce the setting, then press the OK (√) button to accept. The display now shows LoLi. Press the OK (√) button to continue. The minimum permissible floor temperature setting is shown. Use the UP (△) or DOWN (▽) button to increase or reduce the setting, then press the OK (√) button to accept.
	**SCAL - Time format and temperature scale selection**	
		You can select either °C or °F and 12 or 24 hour clock as follows: Press the UP (△) or DOWN (▽) button to change the setting. Confirm the required scale with the OK (√) button.
	**ArEA - (group of rooms)** The rooms/channels set as part of the WLCT3 area will follow the automatic temperature settings of this room controller (4-event timer, min. and max. floor temperature limits). Set a channel (room) to ON if it is to be part of this area. Example: An area could be the living room, kitchen, and children's rooms, all of which have a high temperature requirement during the afternoon and early evening and a lower temperature requirement during the morning and night. Each room has an associated channel number (Ch1, Ch2, etc.) determined by the number of the output on the master which controls the valve/actuator for that room. Example: A system may have the kitchen room sensor operating master output #4 and the children's room sensor operating master output #5. If the WLCT3 room controller is situated in the living room and operates output #1, the WLCT3 must be programmed to control output channels 1, 4, & 5.	



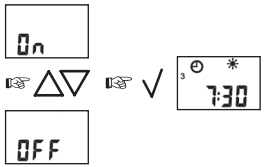
1. Press the UP (△) or DOWN (▽) button to select the channel/room.
2. Press the OK (√) button to view the ON/OFF settings.
3. Press the UP (△) or DOWN (▽) button to change the ON/OFF settings.
4. Press the OK (√) button to return to the channel/rooms select menu.

Set the channel/room (Ch) to ON if it is to follow the settings of this room controller.
A total of 14 channels/rooms can be controlled.

NOTE: If the channel selector (hex encoder) is set to 1 .. 14, the selected channel will always be ON (cannot be set to OFF).

AdAP - Adaptive function
This function enables the thermostat to calculate when it needs to switch the heating ON to ensure that the required temperature is reached by the set time. With a start time of 07:00, for example, the thermostat may switch ON as early as 06:00 so that the desired temperature of 25˚C is achieved by 07:00. Without this function set, the thermostat will start to heat at the time you set.

NOTE: All channels selected in the ArEA menu will follow this setting.



Press the UP (△) or DOWN (▽) button to switch between ON and OFF.

Press the OK (√) button to confirm.

ESC - Escape
Press the OK (√) button to end programming and return to the scheduled programme.

Reset to factory settings - room controllers

NOTE: If more than one WLCT3 is present in the system, please copy this page.

↘ • R	Press the pinhole button R for 3 second. and the thermostat will return to factory settings. Remember to set time, day and area.

4-event times and temperatures						**Own setting**	
		Standard mode	Radiator mode	2-Step mode	Hot water mode		
	Time	**Temperature**	**Temperature**	**Temperature**	**Temperature**	**Time**	**Temperature**
Days 1-5							
☀	06:00	21.0°C	21.0°C	21.0°C	50.0°C		
⌂	08:00	19.0°C	19.0°C	19.0°C	30.0°C		
⌂	16:00	22.0°C	22.0°C	22.0°C	50.0°C		
☽	22:30	17.0°C	17.0°C	17.0°C	30.0°C		
Days 6-7							
☀	08:00	22.0°C	22.0°C	22.0°C	50.0°C		
☽	23:00	17.0°C	17.0°C	17.0°C	30.0°C		
Other settings							
4-event sequence	-	4:52	4:52	4:52	4:52		
High floor limit temperature	-	27.0°C	-	27.0°C	-		
Low floor limit temperature	17.0°C	17.0°C	-	17.0°C	-		
Special settings							
2-step time	-	-	-	60 min	-		
2-step temperature difference	-	-	-	2.0°C	-		

Group		**Room**	
Ch 1	**OFF**		
Ch 2	**OFF**		
Ch 3	**OFF**		
Ch 4	**OFF**		
Ch 5	**OFF**		
Ch 6	**OFF**		
Ch 7	**OFF**		
Ch 8	**OFF**		
Ch 9	**OFF**		
Ch 10	**OFF**		
Ch 11	**OFF**		
Ch 12	**OFF**		
Ch 13	**OFF**		
Ch 14	**OFF**		
Example			
Ch 1		**Kitchen**	**ON**
Ch 2		**Living room**	**ON**

Write the room name in the box beside each Ch number, and add ON if it is controlled by a clock thermostat.

Radiator mode

Where a radiator circuit is used, it is possible to control room temperature using a special WLCT3 mode called Radiator Mode, thus optimizing energy savings.
The controller measures the temperature in the room, and a zone valve is then controlled via the WLM3 master, which in turn activates the boiler on demand.

- For information on programming, see “Advanced Settings and Read-outs”.

2-step mode

A special WLCT3 mode called 2-Step Mode is capable of controlling an additional heat source in a room. In addition to the primary underfloor heating output, 2-step mode is able to control a second output as a boost function. This output will only be activated if the required temperature cannot be achieved by the underfloor heating alone within a preset time period.

The room controller is used as a standard WLCT3.
If required, the settings for when the second heating output is needed can be changed by your service engineer.

- For information on programming, see “Advanced Settings and Read-outs”.

Hot water mode

It is possible to control domestic hot water temperature with a special WLCT3 mode called Hot Water Mode, thus optimizing energy savings.
A sensor is connected to the controller and measures the temperature in the hot water storage cylinder.

- For information on programming, see “Advanced Settings and Read-outs”.

Batteries

For information on batteries, see “Batteries” under “Waterline Room Sensors - Type WLTx3”.

Technical specifications

See the Waterline Room Controller Instructions

Waterline Room Sensor with Display - Type WLDT3

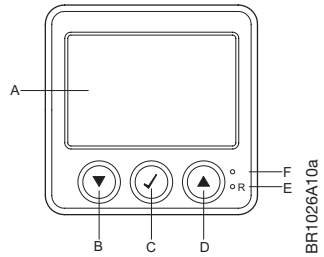
Introduction

WLDT is a room sensor with display.
It displays and controls room temperature with the possibility of adjusting the standard set point in the system by ±4°C.
It also features mode selection, where Auto, Day, Night and OFF (frost protected) are available, and allows connection of a floor sensor for minimum or maximum floor temperature limitation.

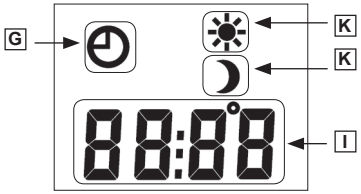
Installation

For installation instructions, see “Installation” under “Waterline Room Sensors - Type WLTx3”.

Getting started



Display



Buttons

A:	B: ▼	C: √
Display	Adjustment down	OK - Accept

D: ▲	E: R	F:
Adjustment up	Reset to factory settings	Wireless initialize button (no function on hardwired versions)

G:	K:	I:
Auto mode	Manual comfort mode Manual setback mode	Indication of actual room temperature and setpoint offset.

Everyday use:

(Home screen functions)

Automatic mode:	 ☞△▽	In automatic mode, a clock symbol (🕘) is shown along with the actual temperature. The temperature is controlled by the master's comfort setpoint or by a room controller (WLCT) if this WLDT is included in the WLCT's area (zone). Use the UP (△) or DOWN (▽) button to adjust the relative setpoint ±4°C compared to the generic setpoint. The display will show how much the set point has been offset relative to the generic set point. Example:  The display will flash for 5 seconds and will then revert to showing the actual temperature.
Comfort mode: ☞√	 ☞△▽	Fixed comfort mode - Press the OK (√) button once to activate. In comfort mode, a sun symbol (☀)is shown along with the actual temperature. The temperature is now controlled only by the master's comfort setpoint (factory setting 21°C), overriding any programmed 4-event schedules in the system. Use the UP (△) or DOWN (▽) button to adjust the relative setpoint, like in automatic mode.
Setback mode: ☞√	 ☞△▽	Fixed setback mode - Press the OK (√) button once to activate. In setback mode, a moon symbol (☽) is shown along with the actual temperature. The temperature is now controlled only by the master's setback setpoint (factory setting 18°C), overriding any programmed 4-event schedules in the system. Use the UP (△) or DOWN (▽) button to adjust the relative setpoint, like in automatic mode.
OFF mode: ☞√	 ☞△▽	OFF mode - Press the OK (√) button once to activate. In setback mode OFF is shown. The temperature is now controlled only by the master's frost protection setpoint (factory setting 5°C), overriding any programmed 4-event schedules in the system. The system is now off, but still with frost protection enabled.

Advanced settings and read-outs:

☞△ + ▽ 3 sec.	Press the UP (△) and DOWN (▽) buttons simultaneously for 3 seconds. INFO will be displayed. Continue pressing the UP(△) button until you reach the submenu you want. Select the submenu with the OK (√) button.	
InFo ☞√ ☞△▽	INFO - Information INFO allows you to view the room and floor temperatures actually measured. The floor temperature is only shown if a floor sensor is installed.	
	Software version → 1 1.00 Room temperature → 2 22.8°C Floor temperature → 3 26.0°C If no sensor is installed, "OFF" is displayed ☞√	Press the UP (△) or DOWN (▽) button to view the various read-outs. No changes can be made here. Use the OK (√) button to return.
SCAL ☞√ ☞△▽	**SCAL - Temperature scale selection** Here you can chose either °C or °F temperature scale:	
°C ☞△▽ ☞√ °F		You can select either °C or °F as follows: Press the UP (△) or DOWN (▽) button to change the setting. Confirm the required scale with the OK (√) button.
ESC ☞√ ☞△▽	21.5°C	ESC - Escape Press the OK (√) button to end programming and return to normal operation.

Batteries

For information on batteries, see "Batteries" under "Waterline Room Sensors - Type WLTx3".

Waterline Room Sensors - Type WLTx3

Setting room temperature

The master is supplied with default temperature settings which are used by all room sensors connected to the system. With WLM 3 - xBA masters, the default DAY, NIGHT and OFF temperature settings are fixed (see “Factory Default Settings”) .

With WLM 3 - xFS masters, the default DAY, NIGHT and OFF temperature settings can be adjusted via the display.

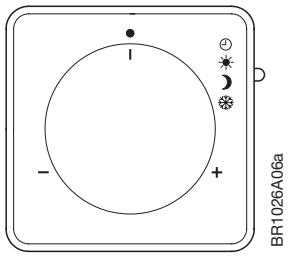
Changing the temperature setting on a WLM 3-xFS master also changes the default temperature for all connected room sensors. However, the temperature setting of each WLTA3, WLTM3 or WLTD3 room sensor is locally adjustable via its own adjustment knob. With this knob, the temperature setting from the master can be increased or decreased by 4°C for that specific room.

Automatic switching between DAY and NIGHT temperatures can be achieved either by connecting a separate timing device to the master or by using a WLCT3 room controller and allocating room sensors as part of its area. It is possible to have two or more WLCT 3 room controllers in the system, each with its own area of room sensors.

If WLTM3 or WLTD3 room sensors have been allocated to a WLCT3 controlled area and AUTO mode has been selected on their built-in slide switches, their temperature settings will be as programmed in the WLCT3 room controller and not in the master. Local ±4°C adjustment will, however, still be possible.

Setting room sensor operating mode

Fig. 3



Room sensors type WLTM3 and WLTDD3 have a slide switch (see fig. 4) for selecting the mode of operation of the sensor. Four different modes can be selected: Auto, Day, Night and OFF.

- Auto: The room sensor will follow the temperature settings of the master or, if it belongs to a zone group controlled by a WLCT3 room controller, will follow the automatic sequence of temperatures and timings set in the WLCT3.
- Day: The room sensor will control the room temperature according to the DAY setting defined on the master (factory setting 21°C).
- Night: The room sensor will control the room temperature according to the NIGHT setting defined on the master (factory setting 17°C).
- OFF: The room sensor will control the room temperature (and with WLTD3 the minimum floor temperature if a floor limit sensor is installed) according to the OFF setting defined on the master (factory setting 5°C). This setting is intended to be a “frost protection” mode and is used if the room is to be left unoccupied for long periods.

WLTM 3 & WLTD3 are recommended for guest rooms and other infrequently used rooms, as they allow simple override of the automatic timing sequence.

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Zone chart

Example				
Thermostat	**Thermoheads / Output**	**Zone**		
Ch 1	1	Kitchen	3 loops marked 1, 2 and 3	W adjustment and min. limit sensor

NB:

The following chart enables you to write down the zone name, the number of loops serving it and the control thermostat type. PLEASE LEAVE THIS CHART WITH THE CLIENT.

Thermostats	**Thermoheads / Output**	**Zone**	**Water loops**	**Thermostats**
Ch 1	1			
Ch 2	2			
Ch 3	3			
Ch 4	4			
Ch 5	5			
Ch 6	6			
Ch 7	7			
Ch 8	8			
Ch 9	9			
Ch A	10			
Ch B	11			
Ch C	12			
Ch D	13			
Ch E	14			
Ch F	Special function		None	